

WHAT IS CLAIMED IS:

1. A display apparatus for enabling artifact-free rapid image format changes to a display device, comprising:

a) a processing unit arranged to automatically receive and process a packet of streaming image content, including,

i) a decoder image processor that receives the packet of streaming image content via a digital process unit content interface,

ii) a decoder control processor that receives the packet of streaming image content from the decoder image processor, and

iii) a display driver that receives the packet of streaming image content from the decoder image processor and the decoder control processor as formatted image data, whereupon the display driver translates the formatted image data for transmission;

b) a display device, including

i) a display image data interface that receives the formatted image data from the display driver via a display image data physical interface,

ii) a display control interface that receives the format data from the display driver via a rapid format change display control physical interface,

iii) a display image processor for converting the image data to artifact-free image data before subsequent transmission;

iv) a spatial light modulator for receiving the artifact-free image data from the display image processor, and

v) a display control processor for controlling and transmitting format data to the display image processor.

2. The display apparatus claimed in claim 1, wherein the spatial light modulator is blanked during known transition delays of an image format change to produce the artifact-free image data.

3. The rapid video interface system claimed in claim 1, wherein the display driver includes:

- a) a driver image data interface that receives the formatted image data from the decoder image processor; and
- b) a driver control interface that receives information on the format data from the decoder control processor.

4. The display device interface system of claim 1, wherein transmission of the format data is over a display control physical interface selected from the group consisting of: RS232, I2C, Ethernet, and Firewire.

5. The display device interface system of claim 3, wherein the driver image data interface is selected from the group consisting of: VESA, DVI or SMPTE (Society of Motion Picture and Television Engineers) standard video or display interface.

6. A method for automatically transitioning between image formats that reduces visual noise caused by the transition between image formats, comprising the steps of:

- a) waiting for arrival of new image content;
- b) extracting format information from the new image content;
- c) analyzing format information for recognizable changes;
- d) sending a blank screen command to a display device where the format information did change;

e) sending a change format command to the display device where the format information did change;

f) transmitting the new image content to the display device where the format information did change;

g) sending an unblank screen command to the display device where the format information did change;

h) returning to step (a);

i) alternatively, transmitting the new image content to the display device where the format information did not change; and

j) returning to step (a).

7. A method for automatic rapid transitioning between image formats that reduces visual noise caused by the transition between image formats, comprising the steps of:

a) waiting for arrival of new image content;

b) extracting format information from the new image content;

c) analyzing format information for recognizable changes;

d) sending a change format command to the display device where the format information did change;

f) transmitting the new image content to the display device where the format information did change;

g) returning to step (a);

h) alternatively, transmitting the new image content to the display device where the format information did not change; and

i) returning to step (a).